

203185US-2 CIP

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF: :

MIROSLAW Z. BOBER ET AL. :

SERIAL NO: NEW CIP APPLICATION : ATTN: APPLICATION BRANCH

FILED: HEREWITH

FOR: METHOD AND APPARATUS FOR
TRANSMITTING A VIDEO IMAGE

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to a first examination on the merits, please amend the above-identified application as follows:

IN THE SPECIFICATION

Please amend the Specification as follows:

Page 1, after line 1, insert:

--BACKGROUND OF THE INVENTION

Field of the Invention--;

after line 6, insert: --Discussion of the Background--.

Page 2, after line 2 insert:

--SUMMARY OF THE INVENTION--

Page 5, before line 1, insert:

--BRIEF DESCRIPTION OF THE DRAWINGS--

after line 14, insert:

--DESCRIPTION OF THE PREFERRED EMBODIMENTS--

Page 9, after line 20, please insert the following:

--Even more importantly, since the tracking module usually uses low-level image features for tracking, such as local image intensity variations or edges, the overall system can achieve good results in stabilizing the position of the face (or other objects). It is preferable not to solely rely on object detection (e.g., pattern-recognition techniques) for tracking and stabilization of the moving object (say face), because it gives unacceptably poor results.--

Page 13, line 5, after "used.", please insert the following:

--References to certain specific formats include modifications, such as rotations, of those formats. For example, QCIF format has a greater width than height (similar to "landscape" configuration in relation to printing on paper). In the context of a person's face, QCIF format rotated by 90°, that is, so it has greater height than width (like "portrait" configuration), is preferable, so that the face occupies a larger proportion of the selected region and less space is allocated to less important parts of the selected region. Similar considerations apply to the choice of the selected and/or displayed region, with reference to the nature, especially shape, of the object of interest, even if the selected and/or displayed region is not in accordance with specific known formats.--

IN THE CLAIMS

Please cancel Claims 25-29 without prejudice.

Please amend Claims 1-15 and 17-24 as follows:

--1. (Amended) A method of transmitting a video [image] including an object of interest, the method comprising:

capturing a sequence of images in which the object of interest occupies a fraction of each captured image[,];

tracking movement of the object of interest [by] and selecting and extracting a region of each captured image including the object of interest[,]; and

coding only the selected region of each captured image to produce a coded region.

2. (Amended) A method as claimed in claim 1 further comprising stabilizing [stabilising] the object of interest within the selected [extracted] region.

3. A method as claimed in claim 2 wherein the [extracted] selected region is selected so that the object of interest is [centred] centered within the [extracted] selected region.

4. (Amended) A method as claimed in [any one of] claim[s] 1 [to 3] further comprising:

transmitting the coded region[,]; and

decoding and displaying the selected region.

5. (Amended) A method as claimed in claim 4 wherein the [extracted] selected region is displayed in a format comprising fewer pixels than the format of the captured image.

6. (Amended) A method as claimed in [any one of] claim[s] 1 [to 5 in which] wherein the object of interest occupies less than a predetermined fraction of each captured image.

7. (Amended) A method as claimed in [any one of] claim[s] 1[-5 in which] wherein the object of interest occupies a [small] predetermined fraction of each captured image.

8. (Amended) A method of processing a video [image] including an object of interest in a sequence of images, the method comprising:

selecting a region of an image including the object of interest, the selected region being of a predetermined size[,]; and

coding the selected region.

9. (Amended) A method as claimed in claim 8 wherein only the selected region is coded and the rest of the [captured] image is discarded.

10. (Amended) A method as claimed in claim 8 [or claim 9] wherein the selected region corresponds to a predetermined image format having fewer pixels than the format of the image [capture of the camera].

11. (Amended) A method as claimed in claim 10 wherein the [captured] image is in CIF format and the selected region is in QCIF format.

12. (Amended) A method as claimed in [any one of] claim[s] 8[to 11] wherein the selected region is scaled to compensate for movement[s] of the object of interest backward[s] and forward[s] relative to [the] a camera that captured the image.

13. (Amended) A method as claimed in [any of] claim[s] 8 [to 12] wherein the object of interest is [stabilised] stabilized within the selected region.

14. (Amended) A method as claimed in claim 13 wherein the selected region is selected [such] so that the object of interest is [centred] centered in the selected region.

15. (Amended) A method of processing a video [image] including an object of interest in a sequence of images, the method comprising:

selecting a region of [the] an image including the object of interest, wherein the selected region [and which] is [greater] larger than [the] an area occupied by the object of interest by a predetermined [degree] amount[.], and

coding said selected region.

17. (Amended) A method as claimed in claim 15 [or claim 16] further comprising scaling the selected region to a predetermined size.

18. (Amended) A method as claimed in claim 17 wherein the predetermined size corresponds to a known image format.

19. (Amended) A method as claimed in claim 18 wherein the [captured] image is in CIF format and the [extracted] selected region is scaled to QCIF format.

20. (Amended) A method of transmitting video images comprising:
processing ~~the~~ video images [according to a method as claimed in any one of claims 1 to 19,];

transmitting [the] encoded image data of the video images[,]; and
receiving, decoding and displaying the image data.

21. (Amended) A method of operating a video camera comprising:
arranging the camera so that an object of interest occupies a fraction of [the] an area of [the] a captured image[,];

tracking movement of the object of interest within the captured image[,];
selecting and extracting a region [of interest] around the object of interest; and
displaying only the extracted [part of] region of the captured image.

22. (Amended) An image processing circuit comprising:
means for extracting a region of each captured image in a sequence of images
including an object of interest; and
means for coding only the [selected] extracted region of each captured image.

23. (Amended) An image processing circuit comprising:
means for selecting a region of an image including an object of interest, the selected region being of a predetermined size[,]; and
means for coding the selected region.

24. (Amended) An image processing circuit comprising:
means for selecting a region of [the] an image such that [the] an object of interest occupies a predetermined percentage of the region[,]; and

means for coding said region.--

Please add Claims 30-62 as follows:

--30. (New) A method as claimed in claim 1 further comprising compensating for changes in size of the object of interest in the sequence of images.

31. (New) A method as claimed in claim 8 further comprising compensating for changes in size of the object of interest in the sequence of images.

32. (New) A method as claimed in claim 15 further comprising compensating for changes in size of the object of interest in the sequence of images.

33. (New) A method as claimed in claim 20 further comprising compensating for changes in size of an object of interest in a sequence of the video images.

34. (New) A method as claimed in claim 21 further comprising compensating for changes in size of the object of interest in a sequence of images.

35. (New) A method as claimed in claim 20, wherein the step of processing the video images comprises the steps of:

capturing a sequence of the video images in which an object of interest occupies a fraction of each captured image;

tracking movement of the object of interest and selecting and extracting a region of each captured image including the object of interest; and

coding only the selected region of each captured image to produce a coded region.

36. (New) A method as claimed in claim 35, wherein the step of processing the video images further comprises stabilizing the object of interest within the selected region.

37. (New) A method as claimed in claim 36, wherein the selected region is selected so that the object of interest is centered within the selected region.

38. (New) A method as claimed in claim 35, wherein the selected region is displayed

in a format comprising fewer pixels than the format of the captured image.

39. (New) A method as claimed in claim 35, wherein the object of interest occupies less than a predetermined fraction of each captured image.

40. (New) A method as claimed in claim 35, wherein the object of interest occupies a predetermined fraction of each captured image.

41. (New) A method as claimed in claim 20, wherein the step of processing the video images comprises the steps of:

selecting a region of an image including an object of interest, the selected region being of a predetermined size; and

coding the selected region.

42. (New) A method as claimed in claim 41, wherein only the selected region is coded and the rest of the image is discarded.

43. (New) A method as claimed in claim 41, wherein the selected region corresponds to a predetermined image format having fewer pixels than the format of the image.

44. (New) A method as claimed in claim 43, wherein the image is in CIF format and the selected region is in QCIF format.

45. (New) A method as claimed in claim 41, wherein the selected region is scaled to compensate for movement of the object of interest backward and forward relative to a camera that captured the image.

46. (New) A method as claimed in claim 41, wherein the object of interest is stabilized within the selected region.

47. (New) A method as claimed in claim 46, wherein the selected region is selected so that the object of interest is centered in the selected region.

48. (New) A method as claimed in claim 20, wherein the step of processing the video

images comprises the steps of :

selecting a region of an image including an object of interest, wherein the selected region is larger than an area occupied by the object of interest by a predetermined amount; and

coding said selected region.

49. (New) A method as claimed in claim 48, wherein the object of interest occupies a predetermined percentage of the selected region.

50. (New) A method as claimed in claim 48, wherein the step of processing the video images further comprises the step of scaling the selected region to a predetermined size.

51. (New) A method as claimed in claim 50, wherein the predetermined size corresponds to a known image format.

52. (New) A method as claimed in claim 51, wherein the image is in CIF format and the selected region is scaled to QCIF format.

53. (New) A circuit as claimed in claim 22 further comprising means for tracking movement of the object of interest in the sequence of images.

54. (New) A circuit as claimed in claim 23 further comprising means for tracking movement of the object of interest in a sequence of images.

55. (New) A circuit as claimed in claim 24 further comprising means for tracking movement of the object of interest in a sequence of images.

56. (New) A circuit as claimed in claim 22 further comprising means for compensating for changes of size of the object of interest in the sequence of images.

57. (New) A circuit as claimed in claim 23 further comprising means for compensating for changes of size of the object of interest in a sequence of images.

58. (New) A circuit as claimed in claim 24 further comprising means for

compensating for changes of size of the object of interest in a sequence of images.

59. (New) A video image processing circuit comprising means for performing a method as claimed in any of the claims 1-21 and 30-52.

60. (New) A video image processing device comprising a camera and a circuit as claimed in any of the claims 22-24 and 53-58.

61. (New) A mobile phone comprising a circuit as claimed in any of the claims 22-24 and 53-58.

62. (New) A mobile phone comprising a device as claimed in claim 60.

REMARKS

Favorable consideration of this application as presently amended is respectfully requested.

The present application is a Continuation-In-Part of co-pending U.S. application, Preliminary Serial No. 09/734,595, filed December 13, 2000.

Claims 1-24 and 30-62 are active in this case, Claims 1-15 and 17-24 having been amended, Claims 25-29 canceled, and Claims 30-62 added by way of the present preliminary amendment. The claim changes are not believed to raise an issue of new matter. In addition, the Specification has been amended.

Examination on the merits of Claims 1-24 and 30-62 is believed to be in order and an early and favorable action is respectfully requested.

Respectfully submitted,

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